Enabling Digital Business with an AutomationML Connectivity Hub

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Motivation

Challenge

- Integration made easy with AutomationML Connectivity Hub – Realize efficient engineering processes due to semantic integration of anything

Approach
- Introduction of innovative (Industrie 4.0/Industrial Internet) technologies capable of realizing...
- ...intelligent and flexible production lines
- ...where smart products are produced
- ...and the customer is directly integrated into the process

Problem
- Producing companies do not meet the requirements to integrate the necessary technologies into a seamless process integration from product development to service delivery

Solution
- Provide a flexible integration hub to easily enable producing companies integrate their processes

Current Situation
- Heterogeneous system landscape – high number of different applications
- Limited interoperability of the applications
- Many point-to-point data flows – lots of individual or even manual interfaces
- Not documented very well, e.g. the direction or the contents of the data flows is unknown
- Maintenance effort for such a landscape is very high and changes are very complex

Use Case: Engineering Master Data Integration

GOAL: Exchange of multidisciplinary Master Data with integrated engineering tool/languages.

CHALLENGE: Engineering master data is mostly related to specific engineering tools, for using the full potential of collaboration inside an integrated engineering landscape with Teamcenter disciplinary master data has to be linked manually.

SOLUTION: AutomationML as an multi-disciplinary data exchange format can capture the links between the disciplines, so it is possible to exchange also those between integrated engineering landscapes.

Use Case: Virtual Commissioning Modell Exchange based on AML

GOAL: Support the generation of a simulation model for virtual commissioning.

CHALLENGE: The effort to generate a simulation model is a key factor for the efficiency of virtual commissioning. Today several information has to be gathered and prepared to one model by the user (e.g. 3D Model, kinematics, behavior).

SOLUTION: All necessary information can be gathered via AML, and Teamcenter. With AML Hub, multi-disciplinary data can be exchanged between AML and Teamcenter to generate a simulation model. e.g. for Process Simulator via AML for a 3rd parties vendor

Use Case: Resource structure exchange

GOAL: Exchange of Resource structures with AutomationML in an integrated engineering environment with external 3rd parties engineering tools like AutomationML.

CHALLENGE: Plant and Resource structures have to be exchanged between different tools during engineering. Inside an integrated engineering this can be managed by Teamcenter but with unmanaged 3rd parties tool this has to be done one by one.

SOLUTION: AutomationML includes the CAEX standard to exchange structures between several tools. AML Hub offers the exchange of plant and resource structures between Teamcenter and 2nd parties tools via AutomationML.

Use Case: MindSphere asset model exchange

GOAL: Transfer an asset model with predefined information as a basis for data analysis in cloud application.

CHALLENGE: Today, the information of a machine or assembly line has to be transferred manual to a cloud e.g. MindSphere for data analytics. Updates also have to be synchronized in the plant model in engineering and the cloud asset model.

SOLUTION: AML Hub offers the option to exchange data between Teamcenter (or Automation ML) with the RDF Standard. So a data exchange process between an integrated engineering environment and an cloud application can be arranged.